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In the BOTANICAL GAZETTE, ii. p. 240, a *Synchytrium Jonesii* Peck was described, which grew on *Zauschneria Californica* and *Vicia Americana*. Through the kindness of Mr. Peck I have been able to examine authentic specimens of the parasite on *Vicia* and *Zauschneria*. Sections in both cases show that spores arise from the clavate tips of hyphæ which extend into the leaf, and therefore the species must be excluded from the genus *Synchytrium*. It seems to me that the fungus is nearly related to *Tuberularia persiana* Ditm., and on the leaves of *Vicia* it is in company with an *Æcidium*, as is stated in the original description.

EXPLANATION OF PLATE IV.—Figs. 1-3. *Synchytrium papillatum*, showing (2) a sorus with zoosporangia, and two epidermal galls (1 and 3), one of which is cut open so as to show two resting spores. 500 diam.

4-6. *S. decipiens*, showing section of a gall with a small sorus (4). 400 diam.; 5, a zoosporangium in which zoospores are forming; 6, free zoospores. 600 diam.

7-8. *S. mercurialis* Fuckel. 7, a resting spore with a sorus containing zoosporangia (8) formed by the protruding episporangium and its contents. After Woronin.

9. *S. phurriannulatum*. Section through a compound gall showing three host-cells with numerous resting spores. 350 diam.

10. *S. Myosotidis* var. *Potentillæ*. Section through epidermal gall showing a resting spore. 500 diam.

11-12. *S. Holwayi*. Section through two galls showing a resting spore (11) and sorus (12) in which the wall has ruptured and fallen off in the host-cell.

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## EDITORIAL NOTES

DR. KARL SPEGAZZINI has been appointed professor and director of the botanic garden of Buenos Ayres.

MR. C. G. PRINGLE has left for a season of collecting along the line of the Mexican Central R. R., especially in W. Chihuahua.

DR. JUST has resigned the editorship of the *Botanischer Jahresbericht* at the close of vol. x, and it will be continued by Drs. Koehne of Berlin, and Geyler of Frankfurt, conjointly.

PASTEUR, in recent experiments, found that beans and peas did not germinate in soil freed from all bacteria, but what relation the bacteria hold to germination is not known.

THE PAPER on the mite gall of the black walnut, by Miss Lillie J. Martin, which was read before the Amer. Association at Philadelphia, is published in the *Amer. Naturalist* for February, illustrated with three plates. We gave a notice of the paper at p. 155 of the preceding volume.

THE GROUNDS of Buchner's belief that the virulent *Bacillus Anthracis* is only a form of the harmless hay bacteria, *Bacillus subtilis*, has been carefully reviewed by Pragmowski, who finds that they are absolutely distinct species. There is doubtless more autonomy among the bacteria than many observers are inclined to admit.

EVEN THE BACTERIA themselves are subject to disease! Inflated forms, called "involution forms" by Nägeli and Buchner, are to be met with in cultures, which De Bary regards as resulting from a disease or degenerate condition, due to insufficient nourishment, and it may be to other causes not well understood.

THE DISEASES of the potato have been well described and illustrated by Mr. C. B. Plowright in recent numbers of the *Gardeners' Chronicle*. The principal ones are the epidemic or common rot (*Phytophthora infestans*), wet rot (*Bacillus amylobacter*), dry rot, scab, and mottled tubers. The cause of the last three diseases is not known.

WE HAVE examined the preparations of transverse sections of coniferous leaves put up by Rev. J. D. King, mentioned in our last issue, and find them admirably done, and thoroughly satisfactory for critical study even under high powers. They are mounted in glycerine jelly, balsam not being suitable for such tissues, and the several sections are arranged and keep their places, which, so far as we know, has never before been successfully accomplished in this medium.

IN THE *West-American Scientist*, for February, Dr. C. C. Parry edits Engelmann's new Euphorbiaceous genus *Tetracoccus*, of which the lamented author left incomplete manuscript notes. Dr. Parry calls the species, a Lower Californian one, *T. dioicus*. But he has worked at cross purposes with Mr. Sereno Watson, who, in Proc. Am. Acad. xx. 372, issued February 21, edits the same genus and names the species *T. Engelmanni*. It becomes a nice question whether Dr. Parry's or Mr. Watson's name should stand.

THE ESTATE of Mr. George Bentham, according to the *Illustrated London News*, amounted to \$115,000, of which he bequeathed \$5,000 each to the Linnean Society of London and the Royal Society's Scientific Relief Fund. The part of the estate remaining after settling the personal bequests is to be applied "in preparing and publishing botanical works, or in the purchase of books or specimens for the botanical establishment at Kew, or in such other manner as his trustees may consider best for the promotion of botanical science."

DR. JULES SCHAARSCHMIDT gives in a recent number of *Nature* a summary of his own and others' investigations into the continuity of protoplasm in plants. He states that it extends from cell to cell through most kinds of tissue, that it often occupies the intercellular spaces where it may secrete a cell wall about itself and form a true cell, and that it even extends as a thin plate of protoplasm between the layers of the cell-wall (e. g. in leaves of mistletoe). This last statement is so remarkable that it needs full confirmation before it is entitled to acceptance.

THE REMARKS of Professor C. E. Bessey, in his report as dean of the Industrial College of the University of Nebraska, show a broad appreciation of

the need of careful experiments and observations in the sciences underlying agriculture, and of the direction these should take. In the same report the following are mentioned among the illustrative collections that such a college requires: a botanic garden, forage garden, grain garden, collections of dried grasses, dried grain-producing plants, samples of grains, seeds, fruits and vegetables (natural, and in wax casts), of woods and of injurious fungi.

PROFESSOR C. E. BESSEY, in a recent bulletin of the Iowa Agricultural College, speaking of the confusion in popular names for the diseases of plants, says: "It would be well if the teachers in botany and agriculture in our agricultural colleges, and the editors of our agricultural papers could come to some agreement in the use of popular names, for, until this is done, there will always be a great deal of confusion in the reports and communications which have to deal with diseases having these ambiguous names." There can be no doubt of the great need of a standard nomenclature in this respect, and some means should be devised for securing it.

THE NEW *Journal of Mycology* has been received for January and February. We confess to some feeling of disappointment in finding so much space occupied with matter that is not new, and which, in its original form, is quite accessible to most workers. The original purpose of its publication (see vol. ix., p. 180) would have more nearly met our idea of the needs of American mycology; still age and experience may remedy the present defects. The January number contains descriptions of new fungi from Iowa and Kansas. The February number has an article by Professor Trelease on Heteroecismal Uredineæ, and the beginning of an enumeration of the North American *Cercosporæ* by Messrs. Ellis and Everhart.

THE SOCIÉTÉ MYCOLOGIQUE has been founded for the encouragement and extension of a knowledge of esculent fungi, particularly as to their Natural History, hygienic relations and economic uses. It is eminently fitting that such a movement should be instituted by Frenchmen, than whom none have so great a reputation for appreciation of good *cuisine*. The society is not, however, intended to be local, but desires representatives in all countries. The annual dues are 10 fr. (\$2.00) for full members, and 5 fr. (\$1.00) for corresponding members; the latter receive the reports of the sessions, and the former all publications of the society. Address the secretary, Dr. A. Mougeot, Bruyères, Vosges, France, or the editors of this journal, who will gladly give any further information.

IN A PAPER communicated to the American Academy of Arts and Sciences, Dr. W. G. Farlow gives the results obtained in sowing the spores of several species of *Gymnosporangium* on various *Pomaceæ*. They were not quite satisfactory, but far more so than those detailed in a former paper on *Gymnosporangia* (1880), being due to better methods. The matter of cultures with *Uredineæ* is a very simple one, but requires considerable experience to insure success. His conclusions are that the *acidium* of *G. bisepalum* is probably *Rostelia botryapites*, and that of *G. globosum* is possibly *R. aurantiaca*, while that of our most common cedar-apple, *G. macropus*, remains quite undecided. In the same paper are notes on several interesting forms of *Chrysomyxa*, and the uredo of *C. Ledi* is distinguished from the very similar *Uredo ledicola* Peck.